

24.61202
11310

21205
S/148/61/000/001/002/015
A161/A133

AUTHORS: Tarnevskiy, I. Ya.; Vaynsburg, R. A.; Levanov, A. N.; Pozdeyev, A. A.; Ganago, O. A., and Kotel'nikov, V. P.

TITLE: Selection of suitable functions for the utilization of the Ritz method in the theory of working metal by pressure

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 1, 1961, 73 - 83

TEXT: The article deals with the application of the Ritz method (Ref. 11; W. Ritz. Ueber eine neue Methode zur Loesung gewisser Variationsprobleme der mathematischen Physik. Journ. f. d. reine und angewandte Mathematik, Bd. 135, H. 1, 1908) for the calculation of different practical problems of pressure working. Such problems consist in determining the functions of displacement components, and the searched for functions are written in a series:

$$U_k = a_1 \cdot f_1(x, y, z) + a_2 \cdot f_2(x, y, z) + \dots + a_n \cdot f_n(x, y, z), \quad (5)$$

where U_k is any of the coordinate axes; $a_1 \dots$ are indefinite (variable)

Card 1/2

24205

S/148/61/000/001/002/015
A161/A133

Selection of suitable functions for the...

parameters; $f_1(x,y,z)$ - "suitable" functions reflecting qualitatively the displacements pattern and satisfying the boundary zone conditions. The problems discussed as examples are: upsetting of cylindrical billets between flat plates; a parallelepiped between flat plates; a case where the purpose is to determine the propagation of plastic deformation, with a simple axisymmetrical forging used as an example. The mathematical analysis of the individual cases ends with recommendations: 1) If the Ritz method is used, the suitable functions must be selected so as to reflect more or less completely the boundary conditions corresponding to the purpose of investigation. 2) The system of suitable functions describing the deformed state in technological problems can be selected with a series of rough assumptions (uniform deformation, the hypothesis of flat sections, etc.). 3) When the propagation of displacements and deformation within the body has to be determined in detail, the suitable functions will be more complex and contain two or three variable parameters, and at the same time satisfy the boundary conditions more completely. There are 8 figures and 13 references: 12 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)

SUBMITTED: April 30, 1960

Card 2/2

TARNOVSKIY, I.Ya.; VAYSBURD, R.A.; YEREMEYEV, G.A.; GANAGO, O.A.

Forces in open die forging. Izv. vys. uchen. zav.; chern.
met. 7 no.1:113-122 '64. (MIRA 17:2)

1. Ural'skiy politekhnicheskiy institut.

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

GANAGO, O.A.; TUNEV, G.Ya.; VAYSBURD, R.A.

Rolling the blanks of bore bit shanks. Kuz.-shtam.proizv. 4 no.8:
5-6 Ag '62. (MIRA 15:8)
(Rolling (Metalwork)) (Forging)

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

S/0182/64/000/002/0013/0019

ACCESSION NR: AP4019024

AUTHORS: Grigor'yev, I. I.; Vaysburd, R. A.

TITLE: Comparison of methods of calculating the stamping force

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 2, 1964, 13-19

TOPIC TAGS: metal forming, metal stamping, stamping stress, stamping force, plastic deformation, stamping blank

ABSTRACT: Nine different analytical formulas for calculating the stamping force in metal stamping were compared with experimental results for the configuration shown in Fig. 1 on the Enclosure. Equations for the nine formulas are presented and their derivations and major assumptions are briefly discussed. Three of the formulas are semi-empirical, three use integration of approximate equations of equilibrium and plasticity, two use variational principles of mechanics, and one uses the method of characteristics. The results obtained with these formulas were compared with experimental results for $D_n/H_3 = 3.7 - 69.0$. It was found that two of the formulas gave significantly better results than the rest; one derived by variational methods, the other by the method of characteristics. The latter was derived by L. A. Shufman (Osnovy* rascheta protsessov shtampovki i pressovaniya.

Card 1/4

ACCESSION NR: AP4019024

Mashgiz, 1961); the former was derived by I. Ya. Tarnovskiy, R. A. Vaysburd, G. A. Yeremeyev, and O. A. Ganago (no reference), and was presented for the first time in this paper as: $P = P_n p_n + P_3 p_3$. For round stampings:

$$p_n = \sigma_s \left(1 + \frac{6.14 \frac{D_n}{H_n}}{26.4 + \frac{D_n}{H_n}} \right)$$

$$p_3 = \sigma_s \left[1 + \frac{\frac{D_n}{H_n} \left(1 - \frac{D_n^2}{D_3^2} \right)}{3 \cdot \frac{D_n^2}{D_3^2}} \right]$$

for elongated stampings:

$$p_n = 1.15 \sigma_s \left(1 + \frac{6.61 \frac{B_n}{H_n}}{21.8 + \frac{B_n}{H_n}} \right)$$

$$p_3 = 1.16 \sigma_s \left[1 + \frac{p}{2} \left(1 + \frac{B}{B_n} \right) \frac{B_n}{H_n} \right]$$

Card 2/4

ACCESSION NR: AP4019024

(where: F_n = projected area of part, F_z = projected area of b_z dimension, D = diameter, B = width). Although these formulas compared best with experimental results, it was found that their application is influenced considerably by the choice of σ_s which is not further discussed in this paper. Orig. art. has: 1 table of formulas, 2 tables, and 2 formulas.

ASSOCIATION: none.

ENCL: 01

SUBMITTED: 00

DATE ACQ: 27Mar64

OTHER: 000

SUB CODE: ML

NO REF Sov: 014

Card 3/4

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

ACCESSION NR: AP4019024

ENCLOSURE: 01

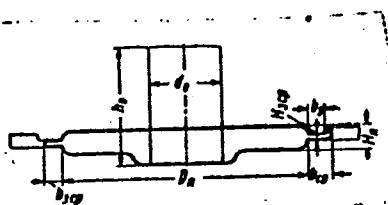


Fig. 1 Geometry of experimental stamping.

Card 4/4

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

TARNOVSKIY, I.Ya.; POZDEYEV, A.A.; KOLOMOGOROV, V.L.; VAYSBURD,
R.A.; GUN, G.Ya.; KOTEL'NIKOV, V.P.; TARNOVSKIY, V.I.;
SKUROKHODOV, A.N.

[Variational principles of mechanics in the theory of metal-
working by pressure] Variatsionnye printsipy mekhaniki v teo-
rii obrabotki metallov davleniem. Moskva, Metallurgizdat,
1963. 52 p. (MIRA 17:5)

VAYSBURD, R. A., Cand. Tech. Sci. (diss) "Investigation of
Deformations and Tensions During Volume Stamping with Utilization
of Variation Principles," Sverdlovsk, 1961, 16 pp (Urals Poly-
tech. Inst.) 150 copies (KL Supp 12-61, 264).

TARNOVSKIY, I.Ya.; GANAGO, O.A.; VAYSBURD, R.A.

Calculating forces in forging. Izv. vys. ucheb. zav.; chern. met.
no.2: 51-61 '61. (MIRA 14:11)

1. Ural'skiy politekhnicheskiy institut.
(Forging machinery) (Deformations (Mechanics))

S/148/60/000/004/001/005
A161/A029

AUTHORS: Tarnovskiy, I.Ya., Ganago, O.A., Vaysburd, R.A.

TITLE: Deformations and Stresses in Closed Piercing Process

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Chernaya metallurgiya,
1960, No. 4, pp. 99-108

TEXT: The "closed piercing, i.e., forcing the punch into a billet held in a shell (or die), is widely used for production of cupped parts, thick-walled containers, etc., and comes into use for cold extrusion of thin-walled aluminum, brass and steel. The process is analyzed in its three stages: the first stage when metal fills the space, the second stage in which metal is forced out from under the punch and flows upward, plastic deformation under the punch remaining at a certain depth, and the third stage, when all metal under the punch takes part in plastic deformation. The calculation of efforts necessary for the operation is of practical importance. The calculation method had been published previously (in Refs. 5,6, etc.). This article gives a practical calculation of a problem with analysis of the second and third stage of the process. A formula is derived (27) for determining the $\frac{P}{\sigma_s}$ value, i.e.,

Card 1/3

S/148/60/000/004/001/006
A161/A029

Deformations and Stresses in Closed Piercing Process

the pressure divided by the punch face area. For approximate practical calculations of pressure simplified formulas (28 and 29) are recommended for the second and third stages, respectively. The equation for $h_{u_2} = h_x$ (see figure) corresponding to the transfer from the second stage to the third stage is easily found from the equations (28) and (29). The following final equation is obtained:

$$\frac{h_x}{D} = 0.11 \frac{1 - \frac{D_u}{D^2}}{1 - 0.85 \frac{D_u}{D}}, \quad (30)$$

There are 7 figures and 8 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

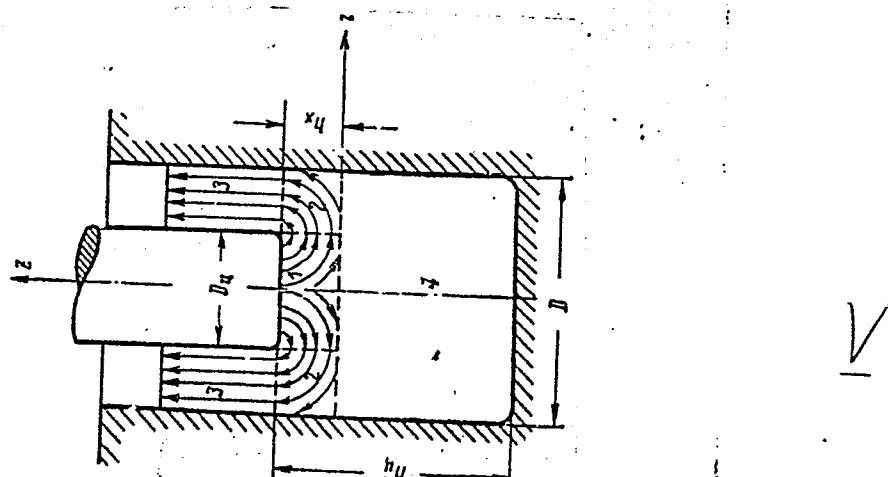
SUBMITTED: May 25, 1959

Card 2/3

S/148/60/000/004/001/005
A161/A029

Deformations and Stresses in Closed Piercing Process

Figure 1:



Card 3/3

POZDEYEV, A.A.; TARNOVSKIY, I.Ya.; VAYSBURD, R.A.; ORLOV, S.N.

Calculating forces during the extrusion of aluminum alloy rods.
Izv. vys. ucheb. zav.; tavet. met. 5 no.5:145-155 '62. (MIRA 15:10)

1. Ural'skiy politekhnicheskiy institut, kafedra obrabotki
metallov davleniem.
(Extrusion (Metals)) (Aluminum alloys)

S/182/63/000/002/003/007
A004/A126

AUTHORS: Vaysburd, R. A., Tarnovskiy, I. Ya., Teterin, G. P.

TITLE: On the use of high-speed computers in developing die-forging technology

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 2, 1963, 10 - 13

TEXT: The authors are of the opinion that for solving the problems connected with the design particulars of a given component, e.g. dimensions, material, surface finish etc., high-speed computers can be used. Besides increasing the productivity, they would eliminate any subjective solution of technological problems. Since the most simple and widespread group of forgings are axially symmetric ones, i.e., forgings of the body-of-revolution type, this type of forgings would be the first whose technology could be developed by means of high-speed computers. The authors give a detailed description of a universal program which is being developed at present by a team of scientists of the Section "Metal Working" of the Ural'skiy politekhnicheskiy institut imeni S. M. Kirova (Ural Polytechnic Institute im. S. M. Kirov), and the Laboratory of Forg-

Card 1/2

S/182/63/000/002/003/007

A004/A126

On the use of high-speed computers in...

ings of NIPIGORMASH in cooperation with technologists of Uralmashzavod. They enumerate the data to be programmed, the technological details to be determined, present formulae for determining the subprograms of calculating the forging volume, fixing the overlap and determining the forging draft. The results of the investigations carried out prove the practicability of using successfully high-speed electronic computers for working out the technological processes of die forging. There are 5 figures.

Card 2/2

VAYSEBURD, R.A.; TARNOVSKIY, I.Ya.; TETERIN, G.P.

Use of rapid computers for the development of forging. Kuz.-
shtam.proizv. 5 no.2:10-13 F '63. (MIRA 16:2)
(Forging) (Electronic computers)

AUTHORS:

Tarnovskiy, I. Ya., Ganago, O. A.,
Vaysburd, R. A.

SOV/163-58-2-33/46

TITLE:

Theoretical Investigations in Open and Closed Dies for
Annular Swage Blocks (Teoreticheskoye issledovaniye
shtampovki pokovok kol'tsevoy formy v otkrytykh i zakrytykh
shtampakh)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,
Nr 2, pp. 184 - 191 (USSR)

ABSTRACT:

The stages of annular swage blocks in open and closed dies were investigated. In punching in open dies the filling in of the metal into the cavities of the dies as well as the flow of the metal are determined by the position of the critical surface. In stamping in closed dies an unequal flow of the metal in the open zone is observed. This influence is explained by the different direction of the internal friction forces in those zones. The rules governing the flow of the metals in various stages of the stamping of annular swage blocks were determined. A simple formula for any moment of the depression, in the second stage of stamping was found (7). By knowing the position of the

Card 1/2

Theoretical Investigations in Open and Closed Dies
for Annular Swage Blocks

SOV/163-58-2-33/46

critical surface for any moment of the depression in
the second stage of stamping the height of the metal
in cavity may be calculated at any single moment. Taking
into account the rules governing the flow of the metal
in the various cavities as well as the velocity factors
in stamping an efficient construction of the dies may be
reached. There are 5 figures and 2 references, 2 of which are
Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical
Institute)

SUBMITTED: October 5, 1957

Card 2/2

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

TARNOVSKIY, I.Ya.; GANAGO, O.A.; VAYSBURD, R.A.

Deformations and forces in closed piercing. Izv.vys.ucheb.zav.;
chern.met. no.4:99-108 '60. (MIRA 13:4)
(Rolling (Metalwork)) (Deformations(Mechanics))

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

TARNOVSKIY, I.Ya.; GANAGO, O.A.; VAYSBURD, R.A.

Investigating metal flow during upsetting with backing rings
by means of the variations method. Izv.vys.ucheb.zav.; chern.
met. no.5:55-60 '60. (MIRA 13:6)

1. Ural'skiy politekhnicheskiy institut.
(Forging) (Deformations (Mechanics))

TARNOVSKIY, I.Ya., prof., doktor tekhn.nauk; GANAGO, O.A., dots.;
VAYSBURD, R.A., inzh.

Investigating deformations and forces in forging on ring pads.
Izv.vys.ucheb.zav.; chern.mat. 2 no.8:55-67 Ag '59.
(MIRA 13:4)

1. Ural'skiy politekhnicheskiy institut. Rekomendovano
kafedroy obrabotki metallov devleniyem Ural'skogo politekhnicheskogo instituta.
(Deformations(Mechanics)) (Forging)

18(5)

AUTHORS:

Tarnovskiy, I. Ya., Gamago, G. A., Vaysburd, L. A.

SCY/160-59-1-24/5c

TITLE:

Determination of the Forces in Swage Forging of Axially Symmetrical Forgings (Opredeleniye usiliy pri shtampovke osesimmetrichnykh pokovok)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959,
Nr 1, pp 126 - 132 (USSR)

ABSTRACT:

In the articles cited by references 1,2,3,4, and 5 the statement is found that in any kind of drop forging a certain amount of surplus metal is pressed from the swage into the fin groove, after the swage has been completely filled. This stage, termed "pre-forging" stage, of the forging process is distinguished by requiring the maximum forging force which must be determined in order to ascertain the required press or hammer weight. It has been found that in the pre-forging stage not the total metal volume contained in the swage is subjected to deformation, but only that part of the volume being near the swage surface. If ways and means would be found of determining the actual deformation zone in the pre-

Card 1/4

Determination of the Forces in Swage Forging of Axially Symmetrical forgings SOV/163-50-1-24/50

forging stage a determination of the force required could be achieved with a sufficient accuracy. There is no necessity of taking into account the complicated shape of the swage and thus the number of variables is reduced. Only the diameter of the swage at the inside perimeter of the fin groove, the dimensions of this groove and the ratio between the fin thickness and the dimensions of the actual deformation zone of the forging in the pre-forging stage must be taken into account. The accuracy in solving this problem depends upon the accuracy with which the boundaries of the actual deformation zone of the metal in the swage can be determined and upon the simplifying restrictions placed upon some of the formulas. Various methods of determining these boundaries are found in publications (Refs 1,2,3,4,5). In this article the shape of the deformation zone is for the sake of simplicity assumed to be conical. For the purpose of determining the actual plastic deformation in the pre-forging stage the law of the minimum of total deformation energy was applied. This allows a theoretical deformation of the boundaries of the deformation

Card 2/4

Determination of the Forces in Swage Forging of Axially Symmetrical forgings SCV/163-59-1-24/50

zone. This problem was solved by applying the Ritz variation method. Its application to the upsetting deformation of metals has been described in earlier articles (Ref's 6,7). Comprehensive experimental information was used in establishing formula (1) which describes the curve expressing the actual propagation of the deformation zone in drop forging. This formula only describes the shape of the boundary between the rigid and the plastic zone of the forging. The volume of the deformation zone depends upon the varying parameter a_1 which is determined by the law of the minimum of the total deformation work and is specified by formula (13). a_1 determines the propagation of the zone of plastic deformation. Formula (15) for

$\frac{P}{\sigma'_S}$ is obtained, where p denotes the average specific pressure and σ'_S the yield point at given temperatures and velocities. The experimental checking of formula (15) yielded satisfactory

Card 3/4

Determination of the Forces in Swage Forging of Axially Symmetrical Forgings SOV/163-59-1-24/5o

results. Formula (13) on simplification gives formula (14) and formula (15) on simplification gives formula (16). These formulas can, however, only be used if the height of the deformation zone does not exceed the depth of the swage and if the temperature both of the forging and of the fin are equal. There are 4 figures and 8 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural'skiy Polytechnical Institute)

SUBMITTED: April 7, 1958

Card 4/4

S/149/62/000/005/008/008
A006/A101

AUTHORS: Pozdeyev, A. A., Tarnovskiy, I. Ya., Vaysburd, R. A., Orlov, S. N.

TITLE: On the calculation of force in pressing aluminum alloy rods

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya,
no. 5, 1962, 145 - 155

TEXT: In order to develop methods of determining the force in pressure working of metals, the authors attempted the derivation of a formula to calculate the force in rod pressing, using direct methods of variation calculus. Force and pressure are calculated with the use of a rough, approximate metal flow diagram (Fig 1) where the container is divided into 3 sections, the velocity field is kinematically possible, and value "a" is the depth of deformation spread. The following simplified formula for the necessary force in pressing rods is derived:

$$\frac{P_c}{2\tau_s} = 1.1 + 1.15 \lg \lambda + 2 \sqrt{\frac{0.4\lambda + 0.6}{\lambda}} - 1 + 2.8 \frac{L}{D}; \quad (6)$$

λ is the extrusion. The calculated data were experimentally checked and their

Card 1/4

On the calculation of force in...

S/149/62/000/005/008/008
A006/A101

satisfactory agreement makes it possible to recommend the relation obtained for the determination of the pressing force for aluminum alloys. Calculations with the use of formula (6) are simple and do not yield indefinite results as e.g. Gubkin's formulae. Graphs are plotted to facilitate calculation (Figure 7). There are 2 tables and 7 figures.

ASSOCIATIONS: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)
Kafedra obrabotki metallov davleniyem (Department of Pressure
Working of Metals)

SUBMITTED: April 9, 1962

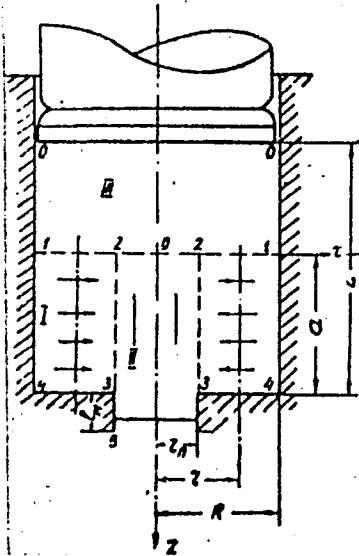
Card 2/4

On the calculation of force in...

S/149/62/000/005/008/008
A006/A101

Figure 1. Kinematic diagram of metal flow and shear volumes in pressing rods from a round container

Legend: r_n is the rod radius; R is the container radius; L is the length of the pressed ingot; l_m is the length of the operational zone of the die; a is the depth of deformation seat spread (variable parameter)

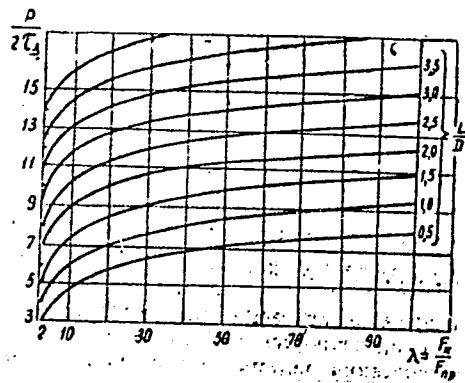


Card 3/4

On the calculation of force in...

S/149/62/000/005/008/008
A006/A101

Figure 7. Graph of function $\frac{P}{2\tau_s} = f(\lambda; \frac{L}{D})$ for $K = 1.4$
(K is $\frac{\tau_s}{\tau_s}$; τ_s is friction stress; τ_s is the shear yield point)



Card 4/4

27057

S/148/61/000/002/004/01

A161/A133

11310

AUTHORS: Tarnovskiy, I. Ya., Ganago, O. A. Vaysburd, R. A.

TITLE: Calculating the forces in drop and forging

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 2
1961, 51 - 61

TEXT: The rated pressing stress of presses has to be selected for the expected maximum pressure required, i.e., finish forging when the surplus metal of the blank is forced out into the flash. The high number of existing theoretical and empirical formulae show that the problem is both important and difficult to solve. Usually the zone of plastic deformation at the flash space is determined experimentally and the data are used for calculations. The authors consider this practice wrong since the results are correct for the definite experiment conditions only, and use a different approach. The article presents a mathematical analysis in which the spreading of the plastic deformation zone at the flash space is determined theoretically for the minimum (instead of the maximum) full deformation energy. This principle itself had been treated in three previous works [Ref. 8: I. Ya. Tarnovskiy, A. A. Pozdeyev, V. B. Lyashkov. Deformatsiya metalla pri pro-

Card 1/4

27037

S/148/61/000/002/004/011

Calculating the forces in drop and forging

katke (Metal deformation in rolling), Metallurgizdat, 1956; Ref. 9: I. Ya. Tarnovskiy, O. A. Ganago, R. A. Vaysburd. "Nauchnye doklady vysshey shkoly. Metalurgiya, 1959, no. 1; Ref. 10: I. Ya. Tarnovskiy, A. A. Pozdeyev. "Nauchn. dokl. v. khk. Metallurgiya", 1958, no. 1]. Numerous experiments had been conducted with coordinate networks traced in different portions of specimens and deformations studied with tool microscope, and the same means were used later for verifying the theoretical conclusions. A formula describing the real spread of the plastic deformation into the die cavity has been derived (see Figure 1, a):

$$h_n = h_3 + a_1 h_3 \left(1 - \frac{x^2}{B_n^2} \right), \quad (1)$$

where h - current ordinate (or height) of expanding seat of plastic deformation; a_1 - indeterminate (variable) parameter. The formula (1) determines only the shape of the boundary between the rigid (1) and the plastic (2) zone in the forgings, but the volume of the plastic deformation zone depends on the variable parameter (a_1). This parameter is determined by the following analysis. An electronic computer had been used for more accurate calculations. The Simpson rule and the Siebel formula (the latter for the determination of specific contact friction) are employed in the derivation of the final two simple formulas (12) and (13) for the

Card 2/4

27037

S/148/61/000/002/004/011
A161/A133

Calculating the forces in drop and forging

case of flat and of axially symmetric forgings:

$$\frac{P}{1.15} = 1 + 0.25 \frac{B}{H_2}, \quad (12)$$

where $B = 2b$ is the width of the forging with the flash bridge; $H_2 = 2h_2$ - the flash thickness:

$$\frac{P}{1.15} = 1 + 0.17 \frac{D}{H_2}, \quad (13)$$

where D is the forging diameter with the flash bridge. The formula (12) corresponds the formula obtained by Unkov [Ref. 12: Plasticheskaya deformatsiya pri kovke i shtampovke (Plastic Deformation in Forging and Stamping), Mashgiz, 1939] for the calculation of the stresses during upsetting between two parallel plates, and the formula is known as the Siebel formula derived for the case of upsetting of cylinders. This coincidence of the formulae leads to an important conclusion - that the value of the force required for finish forging depends not on the configuration of the forging in the vertical cross section, but on the shape and dimensions of the forging in the plane, the flash thickness, and the temperature and speed of

Card 3/4

27037

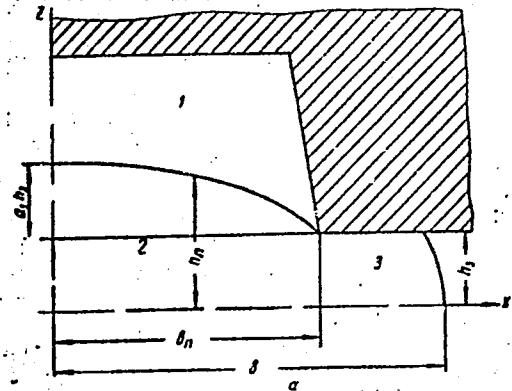
S/148/61/000/002/004/011
A161/A133

Calculating the forces in drop and forging

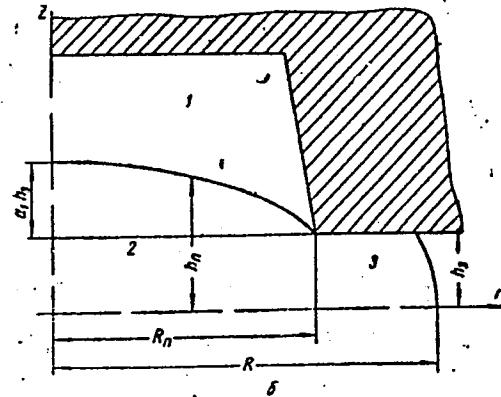
stamping. Experiments conducted with lead forgings gave results confirming this conclusion. There are 5 figures, 3 tables and 13 Soviet-bloc references.

Figure 1:

a - flat problem;



b - axially symmetric problem.



Card 4/4

TARNOVSKIY, Iosif Yakovlevich; POZDEYEV, Aleksandr Aleksandrovich;
GANAGO, Oleg Aleksandrovich; KOLMOGOROV, Vadim Leonidovich;
TRUBIN, Valeriy Nikolayevich; VAYSBURD, Rual'd Arkad'yevich;
TARNOVSKIY, Valeriy Iosifovich; GOROBINCHENKO, V.M., red.
izd-va; BEKKER, O.G., tekhn. red.

[Theory of working metals by pressure; variational methods
of calculating forces and deformations] Teoriia obrabotki
metallov davleniem; variatsionnye metody rascheta usilii i
deformatsii. [By] I.IA.Tarnovskii i dr. Moskva, Metallurg-
izdat, 1963. 672 p. (MIRA 17:1)

VAYSBURG, R.S.

Control of ichthyophthiriasis on the Alma-Ata fishfarm. Trudy
Inst. zool. AN Kazakh. SSR 19:249 '63. (MIRA 16:9)
(Alma-Ata--Protozoa, Pathogenic)
(Alma-Ata--Parasites--Fishes)

VAYSBURD, S.I., inzh. (g. Lugansk)

Experimental automatization of the exchange of mine cars on
the surface of No.1 "XIX Parts" ezd Mine of the Leninugol'
Trust.. Ugol' 35 no.l.16-18 Ja '60. (MIRA 13:5)
(Automatic control)
(Lugansk Province--Mine railroads--Cars)

VAYSBURD, S.Ye.; KHEYFETS, V.L.

Electrochemical study of the interaction between metallic iron and slag (displacement of nickel from slags by the iron).
Izv.vys.ucheb.zav.; tsvet.met. 2 no.6:76-84 '59.
(MIRA 13:4)

1. Institut "Gipronikel"

(Electrochemistry) (Slag--Analysis) (Ion exchange)

VAYSBURD, S. Ye. Cand Chem Sci -- "Study of the thermodynamic properties of iron-containing silicate ^{melts} fusions by the electrochemical method." Len, 1959.
11 pp (Min of Higher and Secondary Specialized ■ Education RSFSR. Len
Order of Labor Red Banner Technological Inst im Lensovet), 200 copies
(KL, 49-59, 138)

-14-

PHASE I BOOK EXPLOITATION SOV/2216

VAYSBURD S *Cyo*

Soveshchaniye po elektrokhimi. 4th, Moscow, 1956.

Trudy... [Isbornyi] (Transactions of the Fourth Conference on Electrochemistry) Collection of Articles. Moscow, Izd-vo AN SSSR, 1959. 866 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademika Nauk SSSR. Otdeleniye Khimicheskikh nauk.

Editorial Board: A.M. Prunkin (Resp. Ed.) Academician, O.A. Yestin Professor; S. I. Zhdanov (Resp. Secretary) B. N. Kabanov, Professor; Ya. M. Mal'cikin, Doctor of Chemical Sciences; B. N. Kabanov, Professor; V. V. Losenyuk, Professor; Z. A. Solov'yova, Professor; P.D. Lukovskiy, Professor; V. I. Stander, Professor; G.M. Pletikanovich, Ed. Of Publishing House N.G. Tsvorovi; Tech. Ed.: T.A. Prunkina.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, branches of the Academy of Sciences USSR. The collection pertains to different galvanic processes in metal electrodes, double layer theories and polyelectrolytes. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Garmen, P.-V., ... L.D. Yushina (Ural'skiy filial AN SSSR Uralskii P-lich. Academy of Sciences USSR). Cathodic Processes During the Precipitation of Anorium From Fused Electrolytes 343

Dulidin, I. F., and A. V. Bublikayev (Gosudarstvennyy nauchno-issledovatel'skiy institut rastvorov i zavisimostey-platevnoi-tekhniki Research Institute of Nonferrous Metals). Mechanism of the Reduction of Galena from Suspensions in Fused Mixtures of Magnesium and Sodium Chlorides at a Liquid-Lead Cathode 352

Panchenko, I. D. [Institut obshchey i neorganicheskoy khimii AN UDSR-Institute of General and Inorganic Chemistry, Academy of Sciences, UkrSSR]. Equation for a Polarographic Wave at Solid Electrodes in Fused Salts 355

Chernik, N. G. (Aviat.ionnyy institut Kuybyshev-Aviation Institute, Kuybyshev). Some Problems of the Polarography of Fused Electrolytes 358

Vaynsburg, S. Ye., and V.I. Rheyets (Gosudarstvennyy institut po proektirovaniyu prepraviteliy nikel'evoy promyshlennosti - State Institute for the Planning of Enterprises of the Nickel Industry). Decomposition Voltage and Properties of Slags Used in Nonferrous Metallurgy 362

Discussion [V.P. Mashovets and contributing authors] 365

PART V. THE ELECTRODEPOSITION OF METALS 369

Mashovets, R. N. (Gosudarstvennyy institut po proektirovaniyu prepraviteliy nikel'evoy promyshlennosti - State Institute for the Planning of Enterprises of the Nickel Industry). The Planning of Enterprises of the Nickel Industry 371

Bochris, J., O.M. U. Mil, and B.E. Conway (U.S.A.). Determination of Faraday Resistance of Solid Electrodes and Phases Which Determine Rate During the Electrodeposition of Copper 380

Nayeqyan, A. T. Monohemogeneity of an Electrode Surface and

Card 16/34

the Mechanism of the Electrodeposition of Metals 395

Polyakov, Yu. M. and K. M. Gorbulova (Institute of Physical Chemistry, Academy of Sciences USSR). Some Theoretical Problems on the Electrodeposition of Alumin 404

5.4130,5.1310,5.4600

75655
SOV/80-32-10-4/51

AUTHORS: Vaysburd, S. Ye., Kheyfets, V. L.

TITLE: Concerning the State of Cuprous Sulfide in Iron-Bearing Molten Silicates

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 10, pp 2153-2157 (USSR)

ABSTRACT: This is a study of the above silicates with addition of iron and copper sulfides. Samples: silicate melts of the CaO-FeO-SiO_2 type containing some MgO and Fe_2O_3 , and a multicomponent slag of shaft furnace smelting. Test conditions: MgO crucibles; nitrogen atmosphere; $1,250 \pm 5^\circ$. After measurement of the decomposition voltage E , quenching, and removal of sulfide and metal inclusions, the silicates were analyzed chemically; the slag ionic composition and decomposition voltage $E^{\text{O}'}$ were calculated, taking into account the trivalent iron content. The presence of S introduced as FeS did not affect the anode potential since anode polarization

Card 1/3

Concerning the State of Cuprous Sulfide in Iron-Bearing Molten Silicates 75655
SOV/80-32-10-4/51

was insignificant, and highly concentrated iron was first to be oxidized at the anode. The presence of Cu_2O caused a sharp drop in decomposition voltage; this indicates that, owing to dissociation to Cu^+ ions, metal (alloy) cathode plating started at a cathode potential higher with respect to a comparable slag containing no Cu. On the other hand, since addition of CuS_2 did not affect the cathode potential, CuS_2 remained undissociated. FeS and CuS_2 concentrations on par with the S and Cu content of industrial slags have no effect on the decomposition voltage and hence on iron activity (γ); knowledge of slag component-oxide content will, regardless of sulfur content, suffice for the industrial application of E and γ . There is 1 table; 1 figure; and 8 references, 6 Soviet, 1 British, 1 German. The British reference is: Bockris, J., Kitchener, G., Ignatowicz, S., Fomlinson, J., Faraday Soc, 48, 75 (1952).

Card 2/3

Concerning the State of Cuprous Sulfide in Iron-Bearing Molten Silicates 75655
SOV/80-32-10-4/51

ASSOCIATION: Planning and Scientific Research Institute of the State Institute for the Design and Planning of the Nickel Industry (Proyektnyy i nauchno-issledovatel'skiy institut gipronikel')

SUBMITTED: September 30, 1958

Card 3/3

S/080/63/036/001/023/026
D204/D307

AUTHORS:

Remen', T.F., Kheyfets, V.L., and Vaynsburg, S.Ye.

TITLE:

The activity of sulfur in binary systems Fe-S,
Co-S, and Ni-S

PERIODICAL:

Zhurnal prikladnoy khimii, v. 36, no. 1, 1963,
218 - 220

TEXT: The present work is a continuation of an earlier study (Izv. vuzov, Tsvet. Metallurg., 6, 58 (1961)). The activities, γ_S , were determined from emf measurements, at 1250°C, with a solid metallic reference electrode, and the calculations were performed by graphical integration of the Gibbs-Duhem equation in the form suggested by Wagner (Termodinamika splavov [Thermodynamics of alloys], Metallurgizdat (1957))

$$\lg \gamma_S = \int_0^{N_{Me}} \frac{\lg \gamma_{Me}}{(1 - N_{Me})^2} dN_{Me} - \frac{N_{Me}}{1 - N_{Me}} \lg \gamma_{Me} . \quad (1)$$

Card 1/2

The activity of sulfur ...

S/080/63/036/001/023/026

D204/D307

taking as unity for compositions to FeS, CoS, and Ni₃S₂. The results are presented in graphical form and show (a) strong negative deviations of S from ideality in all 3 cases, indicating strong bonding of S to Fe, Co and Ni, particularly for low atom % S, (b) Co-S bond is stronger than Fe-S bond, (c) good agreement with available literature data, and (d) dependability of the method used. There are 3 figures.

SUBMITTED: March 26, 1962

Card 2/2

REMEN', T.F.; KHEYFETS, V.L.; VAYSBURD, S.Ye.

Activity of metals in binary systems Fe - S, Co - S and Ni - S.
Izv. vys. ucheb. zav.; tsvet. met. 4 no.6:58-64 '61.

(MIRA 14:12)

1. Proyektnyy i nauchno-issledovatel'skiy institut "Gipronikel".
(Sulfides—Metallurgy)
(Activity coefficients)

VAYSBURD, S.Ye., inzh.; KHEYFETS, V.L., kand.tekhn.nauk

Ionic model of a molten iron-bearing silicate and the activity coefficient of iron in liquid slags. Izv.vys.ucheb.zav.; chern. met. 2 no.5:11-18 My '59. (MIRA 12:9)

1. Leningradskiy institut Gipronikel'. Rekomendovano kafedroy elektropirometallurgii tsvetnykh metallov Leningradskogo politekhnicheskogo instituta.
(Activity coefficients) (slag)

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

ABUSHKEVICH, P.V.; VAYSRUD, V.I.; KULIKOV, I.A.; LEV, M.I.;
MAZURIN, N.D.; ROZINA-ITSKINA, TS.S.; TIKHONOV, G.I.

Epidemic and etiological nature of the virus influenza epidemic
in Khabarovsk in January-March 1959. Vop. virus. 5 no. 6:750
(MIRA 14:4)
N-D '60.
(KHABAROVSK--INFLUENZA)

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

VAYSBURD, S.Ye.; VERNER, B.F.; KHEYFETS, V.L.

Activity of iron in Fe - Ni - S melts. Izv.vys.ucheb.zav.;
tsvet.met. 5 no.1:59-67 '62. (MIRA 15:2)

1. Proyektnyy i nauchno-issledovatel'skiy institut "Gipronikel".
(Activity coefficients) (Iron sulfides) (Nickel sulfides)

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

REMEM', T.F.; KHEYFETS, V.L.; VAYSBURD, S.Ye.

Activity of sulfur in binary systems Fe - S, Co - S, Ni - S.
Zhur.prikl.khim. 36 no.1:218-220 Ja '63. (MIRA 16:5)
(Alloys) (Sulfur) (Electromotive force)

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

REΜEN', T.F.; KHEYFETS, V.L.; VAYSBURD, S.Ye.

Iron activity in the system Cu - Fe - S. Izv. vys. uchab.
zav.; tsvet. met. 5 no.6:57-61 '62. (MIRA 16:6)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy
nikelevoy promyshlennosti.
(Systems(Chemistry))
(Iron—Testing)
(Activity coefficients)

83167
S/056/60/039/002/004/044
B006/B056

24.6900

AUTHORS:

Vaysenberg, A. O., Smirnitakiy, V. A.

TITLE:

Asymmetry in the $\pi^+ - \mu^+ - e^+$ Decay in a Magnetic Field

19

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 2 (8), pp. 242-248

TEXT: It was the purpose of the present paper to investigate the dependence of the asymmetry coefficient of the above reaction in photoemulsions of the type НИКФИ-Р (NIKFI-R) on the magnetic field strength in the range of 0 - 20 koe. The asymmetry coefficients were measured at $H = 0, 54, 110, 206, 420, 680, 1300, 1900, 2500, 3500, 5100, 6300, 14,000$ and 17,000 oe, where H was parallel to the emulsion plane. For shielding the field in the synchrocyclotron room, a double soft-iron shield was used. The magnetic fields in which asymmetry was measured, were generated by an electromagnetic. The authors thank I. I. Gurevich and B. A. Nikol'skiy for placing a special electromagnet at their disposal for the purpose of producing the 14- and 17-koe fields. The

Card 1/3

Asymmetry in the $\pi^+ - \mu^+ - e^+$ Decay
in a Magnetic Field

83167
S/056/60/039/002/004/04/
B006/B056

emulsion chambers consisted of 50 to 100 400- μ NIKFI-R layers, which had been bombarded with π^+ -mesons on the synchrocyclotron of the OIYAI (Joint Institute of Nuclear Research). The asymmetry coefficient a is calculated from the relation $a = K(N_v - N_n) / (N_v + N_n)$, where N_v denotes the number of decays for which the projection of γ and β lay in one quadrant of the ocular scale (the first or third), N_n denotes the number of decays where these projections lay in the opposite quadrant. γ and β are the angles formed by \vec{H} and the emission directions of μ^+ and e^+ , respectively. In first approximation, which is accurate up to some %, $K = 1.57$. The results of these investigations are shown in Tables and in a diagram, and are the following: 1. a grows from -0.09 ± 0.01 ($H=0$) to -0.29 ± 0.01 ($H = 17 - 27$ koe). 2. In the range of 0-17 koe, the course of the $a(H)$ curve is such that a is not proportional to $x^2/(1+x^2)$ (see Fig.) as would be expected to follow from the polarization formula for the Paschen-Back effect in muonium; ($x = H/H_0$, $H_0 = 1580$ oe, - the mean field produced by the magnetic moment of the μ^+ -meson on the electron orbit in muonium). 3. The observed effect may, however, be explained by the

Card 2/3

83167

5/056/60/039/002/004/044
B006/B056Asymmetry in the $\pi^+ - \mu^+ - e^+$ Decay
in a Magnetic Field

Paschen-Back effect in muonium if it is assumed that an additional depolarization due to charge exchange occurs at the end of the μ^+ -path or to exchange collisions after its stoppage. 4. The maximum e -value of -0.29 ± 0.01 is lower by 10% than the value $a = -1/3$, which follows from the theory of weak V-A interaction. This deviation cannot be explained by errors in measurement; it is due either to an additional depolarization of about 10% in the emulsion, or the μ -e decay asymmetry cannot be satisfactorily described by weak V-A interaction. 5. In this as well as in a previous paper (Ref. 2), about 340,000 $\pi^+ - \mu - e$ decay events were evaluated. A search was made especially for $\mu^+ \rightarrow 3e$ or $\mu \rightarrow e + \bar{\nu} + \gamma + \gamma$ decays, but not a single case could be found. The authors thank A. I. Alikhanov for his interest, D. M. Samoylovich, Ya. B. Zel'dovich, A. M. Perelomov, and L. P. Panov for their assistance. There are 1 figure, 3 tables, and 14 references: 4 Soviet and 10 US.

SUBMITTED: February 23, 1960

Card 3/3

VAYSEBURG, L., konstruktor; VYSHLOV, V., konstruktor

PTB-2 loader, Mor.flot 18 no.3:22-23 Mr '58.

(MIRA 11:4)

1. TSentral'noye proyektno-konstruktorskoye byuro No.1
Ministerstva morskogo flota.
(Loading and unloading)

VAYSEBURG, S.I., podpolkovnik meditsinskoy sluzhby

Radiography of the bones and joints with the patient in a vertical
position. Voen.-med. zhur. no.9:72 8 '55. (MLRA 9:9)
(BONE--RADIOGRAPHY)
(JOINTS--RADIOGRAPHY)

TAYSHIN, S. I.

TAYSHIN, S. I.: "Investigation of stereoscopic X-raying." Kazakh State Medical Inst imeni N. I. Polotov. Alma-Ata, 1956. (Dissertation for the Degree of Candidate in Medical Sciences)

So: Kazakhstanskij Istitut No 36, 1956. Doctor

VAYSBURG, S.I., podpolkovnik med.sluzhby

X-ray observations of gastrointestinal motor functions following
appendectomy. Voen.-med.zhur. no.11:73-74 N '57. (MIRA 11:4)
(APPENDECTOMY) (ALIMENTARY CANAL--RADIOGRAPHY)

VAYSBURG, S.I., podpolkovnik meditsinskoy sluzhby

Use of stereoscopic X ray. Voen.-med. zhur. no.5:33-36 My '60.
(MIRA 13:7)
(X RAYS)

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

ERITS, I.G., VAYNSBURG, V.A.

Manufacturing fittings by die stamping. Biul-tekn.-ekon.inform.Gos.
nauch.-issl.inst.nauch.i tekhn.inform.18 no.9:17-18 S '65.
(MIRA 18:10)

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

VAVSRTA M

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

AUTHOR: Gol'dfel'd, S.M., Vaysbut, A.M. and Plastinina, L.A. SOV/113-59-2-6/20

TITLE: Various Filtering Systems of Oil-Cleaning in Engines
(Ochistka masla v dvigateleyakh pri razlichnykh sistemakh filtratsii)

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 2, pp 11-13 (USSR)

ABSTRACT: The article deals with various oil-filtering systems in internal-combustion engines. These systems reduce the wear on piston rings, cylinders, and on lead-bronze bushings in connecting rods. The tests were conducted by the Odessa Electrotechnical Institute of Communications, with the "D-54" four-cycle engines and with the "YAMZ-204" and "YAMZ-206" two-cycle engines. The results reveal that deterioration of moving parts depends largely on the degree of acid and water in the oil, and on the size of particles suspended in it. As countermeasures, various filtering systems were tested including one with a magnetic separator of tiny particles. The best results were obtained with systems using reactive centrifuges and ASFO-type filters. There are 4 tables, 1 graph, and 3 Soviet references.

Card 1/2

SOV/113-59-2-6/20

Various Filtering Systems of Oil-Cleaning in Engines

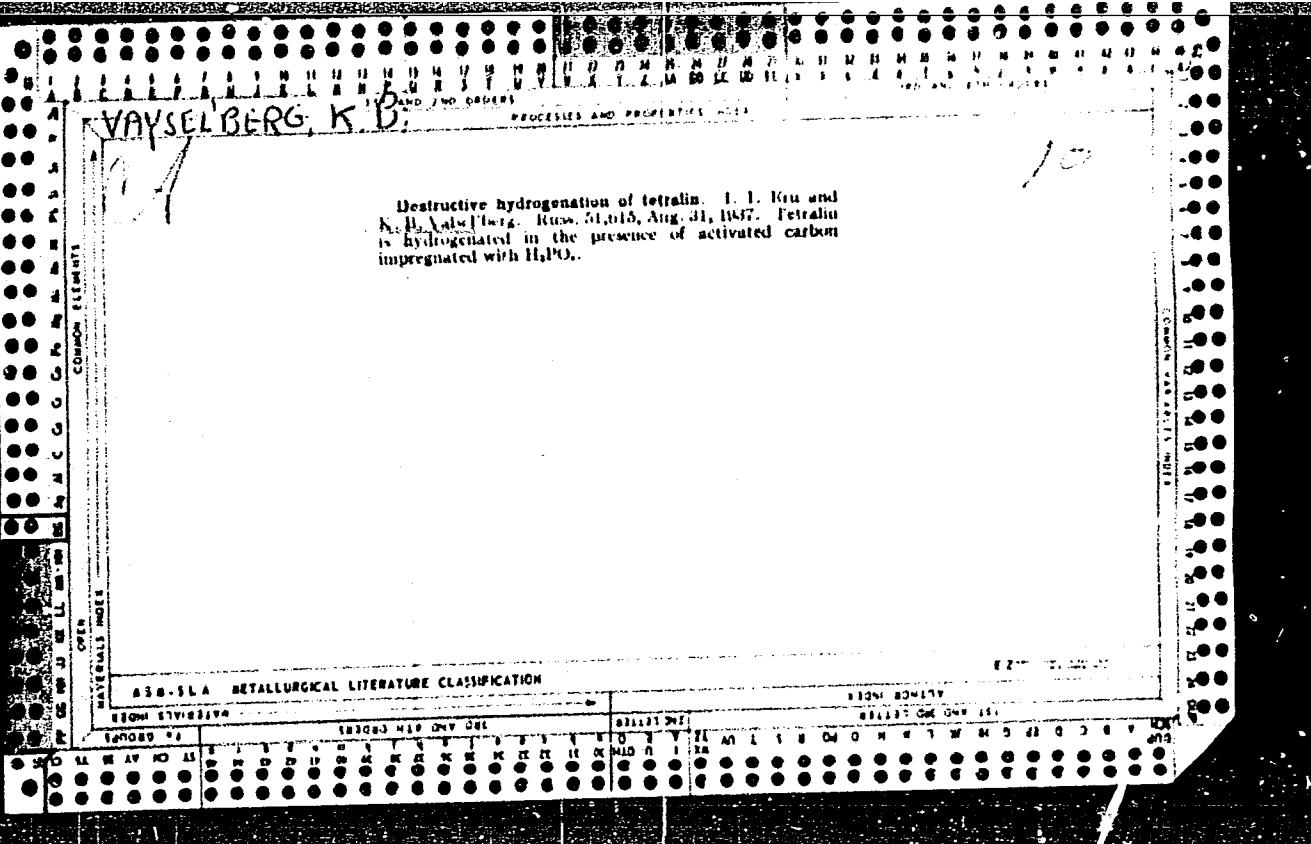
ASSOCIATION: Odesskiy elektrotekhnicheskiy institut svyazi (Odessa Electrotechnical Institute of Communications).

Card 2/2

GOL'DFEL'D, S.M.; VAYSBUT, A.M.

Use of an auxiliary magnetic separator for improving centrifugal oil cleaning. Avt. prom. 27 no. 4:12-14 Ap '61. (MIRA 14:4)

1. Odesskiy elektrotehnicheskiy institut svyazi.
(Automobiles—Engines—Oil filters)



VAYSEL'BERG, K.B.

Co

Hydrogenation of the components of the Aleksandrinsk
skil brown coal. K.B. Vaysel'berg. Khim. Tverdogo
Teploia 8, 232-46 (1937).—From the coal were sepd.
Bitumen (7.62, humic acids 64.69, and residual coal
17.79% (on dry coal). All hydrogenation expts. were

carried out in the "V3A" rotating steel autoclave of 2 l.
capacity at cold H₂ pressure of 100 atm. The heating to
360° was accomplished in 30 min.; then the temp. was
controlled that 450° was reached in hr. and this temp.
was kept for 1 hr. more. Bitumen "A" (montan wax)
was sepd. from the coal by extn. in the Soxhlet app. with
an alc.-C₆H₆ (1:1) mixt. and had an acid no. 34.7, ester
no. 103.8, sapon. no. 138.2, I no. 81.7, ash 1.20, tar 32.6,
and wax 67.8%. It was hydrogenated in the presence of
the Fe₂O₃ and MoS₂ catalysts and without them, yielding
(av.) oil 73, gas 20-22, and unchanged residue 1-2%.
The hydrogenation product was a mixt. of paraffin and
cyclic hydrocarbons. The presence of phenols in the gasoline
fraction (below 175°) was not observed, but was observed
in the fraction b. 175-325°. Humic acids were sepd.
from the residue of the bitumen extn. by treatment with
warm 5% Na₂CO₃ and pptn. of the humic acids with 10%
HCl. The humic acids contained C 60.71, H 4.77, S
5.13, O + N 29.36, and ash 1.43% (on org. substances).
The hydrogenation, carried out as before without catalyst
and in the presence of Fe₂O₃ and MoS₂ catalysts, yielded

oil 8.7, 18.5 and 45%, gas 32, 28.1 and 28.1% and
unchanged residue 81.7, 40.9 and 14.2%, resp. The
liquid fractions of the hydrogenation product contained
phenols and had the characteristics of an aromatic hy-
drocarbon. Semivoke (contg. 16% of ash, and C 63.22
and H 3.45%) of the above coal hydrogenated without
and with Fe₂O₃ and MoS₂ catalyst yielded oil 25.9, 31.6
and 33.7%; gas and loss 13.2, 17.6 and 17.4%; unchanged
residue 82.4, 40.6 and 37.9%, resp. The hydrogenation
product contained phenols and large amts. of aromatic
and unsatd. hydrocarbons. The MoS₂ catalyst promoted
the hydrogenation leading to the formation of naphthalenes
from the aromatic hydrocarbons. The Aleksandrinsk
coal (contg. 10.8% of ash) was hydrogenated itself with-
out and with the above catalyst, yielding oil 25.9, 51.2
and 56.7%; gas and loss 28.6, 29.3 and 29.6%; and
unchanged residue 28.7, 0.9 and 3.8 resp. The ash-
free coal on hydrogenation as above yielded oil 26.1,
42.9 and 44.2%; gas and loss 19.3, about 20, and 26.4%;
and unchanged tarlike 40.6, 22.4 and 17.4%, resp. A
catalytic effect of ash was observed; SiO₂ promoted a
decrease of the amt. of coke and increase of oil, and CaO
promoted a decrease of the residue. No harmful effect
of CaO was observed. Fourteen references.

A. A. Podeornav

A10-14 METALLURGICAL LITERATURE CLASSIFICATION

VAYSEL'D, O. I.

Cysts

Case of strangulating obstruction caused by appendiceal cyst. Vest. khir. 72 no.7 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

VAYSEL'VA, S. M. and Patukina, R. F.

Vayseleva, S. M. "Microflora of various forms and zones in the inflammations of the pulp,"
Trudy Kazansk. gos. stomatol. in-ta, Issue 2, 1949, p.209-217, - Bibliog: 14 items.

SO: U-5240, 17 Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

ZIV, Ye.F.; VAYSENBERG, A.I.; STEPANOV, I.S., nauchnyy red.; YERSHOV, A.D.,
glavnnyy red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; KRYTER, V.M.,
red.; MOKROUSOV, V.A., red.; SOLOV'IEV, D.V., red.; EKHUSHCHOV, N.A.,
red.; CHERNOSVITOV, Yu.L., red.; SHIMANENKOV, I.V., red.; NEKRASOVA,
N.B., red.izd-va; IVANOVA, A.G., tekhn.red.

[Industry's requirements as to the quality of mineral raw material; hand-book for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo
syr'ia; spravochnik dlia geologov, Moskva, Gos.nauchno-tekhn.izd-vo lit-ry
po geol. i okhrane nedr. No.49. [Niobium and tantalum] Niobii i tantal.
Izd.2., perer. 1959. 49 p. (MIRA 12:12)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo
syr'ya. (Niobium) (Tantalum)

SAMSONOV, Grigoriy Valentinovich; KONSTANTINOV, Vladimir Ivanovich.
Prinimali uchastiye: ZIV, Ye.F.; KOSOLAPOVA, T.Ya. NIKOLAEV,
H.S., doktor khim.nauk, setsenzent; VAYSEMBERG, A.I., kand.tekhn.
nauk, retsenzent, red.; KOLCHIN, O.P., kand.tekhn.nauk, retsenzent,
red.; ARKHANGEL'SKAYA, M.S., red.izd-va; VAYNSHTEYN, Ye.B., tekhn.
red.

[Tantalum and niobium] Tantal i niobii. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 264 p.
(MIRA 12:11)

(Tantalum)

(Niobium)

VAYSENBERG, A. O.

Adsorption of cosmic rays in a strong magnetic field at
3250 meters above sea level. A. I. Alikhanyan, A. A. Alikhanov,
S. Ya. Nikitin, and A. Vaysenberg. J. Phys. (U.S.S.R.) 10,
294-5 (1946); cf. preceding abstr.- Analysis of the soft component
of cosmic rays by means of an intense magnetic field shows that
the component having a range of 4-4.5 cm. in Pb is not deflected
by the field, and confirms that the particles generated in Pb
are protons.
B. A.

VAYSENBERG, A. O.

speciality-Nuclear Physics

Scattering of relativistic electrons at a large angle. A. I. Alikhanyan, A. I. Alikhanov, and A. Vaysenberg. J. Exptl. Theoret. Phys. (U.S.S.R.) 16, 369-78 (1946); J. Phys. (U.S.S.R.) 9, 280-8 (1945).- Fast electrons from 100-200-millicurie radon sources (Ra C electrons, upper limit 3175 kv.) were monochromatized by a magnetic spectrograph and beams of energies from 600 to 2000kv. were scattered on thin films placed at 45° to the beam. Scattering was observed with Geiger-Muller counters at an angle between 82° and 97° ; γ -radiation from the source was eliminated. The scattering metal films were obtained by thermal vacuum evapn. and deposited on 2-4-celluloid foils, which contributed not over 10% to the total scattering. By the criterion of linearity of scattering intensity and film thickness, preliminary expts. on Al, Ni, Ag, and Au layers showed that singleness of scattering is approximated the better the faster the electrons, example Al 3.0 and 6.0 mg./sq. cm., energy of electrons 850, 1000, 1200, 1330 kv., ratios of intensities scattered by the thicker and by the thinner film = 2.71, 2.55, 2.19, 2.06, resp. According to Wentzel's (C.A. 17, 923) criterion for single scattering at an angle φ , namely not more than two deflections on the av. by an angle $\leq \pi/4$, scattering of 1000-kv. electrons in Al 100 mg./sq. cm. thick should still be single, whereas exptl. results show that multiple scattering occurs even in 6 mg./sq. cm. Al; consequently, Wentzel's criterion is not applicable. On the other hand, the exptl. ratios obtained check satisfactorily with Artsimovich's formula $N = x + [(1.51 \times 10^{-2} x^2)/E^2]$ where N = no. of electrons scattered by Al, E = energy of electrons in m.e.v., x = THICKNESS of film in Al, and bear out his basic representation of the possibility of

VAYSENBERG, A. O.

Page 2

deflections by large angles through repeated deflections by smaller angles. Final detns. were made with x and E for which scattering is most nearly single, example Al 1.55, 3.00, 6.00 mg./sq. cm., $E = 600-1050$, 800-1200, 1100-1600 kv., resp. For celluloid (at. no. $Z = 7.1$), Al, Cu, Ni, Ag, Au ($Z = 79$), probability of scattering varies with E along the same curve, identical with Mott's theoretical quantum-mechanical curve (cf. C.A. 23, 5406). Abs. values of the scattering on light nuclei and their dependence on Z also check with Mott's theory (example, for Al 3 mg./sq. cm., 1000 kv., within 10-15%), with the exception of Au, for which the exptl. cross-section is about 2.5 times smaller than that predicted by the theory; for Ag ($Z = 47$), owing to the absence of a numerical formula, agreement cannot be asserted. The rapid increase of the effective cross section on scattering by higher angles, claimed by Skobel'tsyn and Stepanova (C.A. 30, 331⁷¹; 32,2825⁹), is not confirmed.

N. Thon

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3

VAYSENBERG, A. O.

"Spectrum of Mesotrons at the Altitude of 3,250 Meters Above Sea Level."
Sub 16 May 47, Order of the Labor Red Banner Inst of Physical Problems, Acad
Sci USSR

Dissertations presented for degrees in science and engineering in Moscow
in 1947

SO: Sum No. 457, 18 Apr 55

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

VAYSENBERG, A. O.

May 47

USSR/Nuclear Physics - Cosmic Radiation
Nuclear Physics - Particles

"The Existence of a Particle With Mass, Between the Masses of a Mesotron and Proton,"
A. I. Alit'hanyan, Corr Mem, Acad Sci USSR; A. I. Alikhanov, A. O. Vaysenberg, Academician,
9 pp

"Vest Akad Nauk SSSR" No 5

During period 1942-1946 authors were stationed on Mount Alagez, at an altitude of
3,250 m above sea level. Discerned cosmic particles very different from mesotrons
and protons. Series of tests revealed data which showed that these particles to be
ionized gases, two to three times greater than either protons or mesotrons. Mass of
this intermediate particle is 250 to 2,000 mo. They are either positive or negative.
Authors express gratitude to V. M. Kharitonov, and N. I. Davon.

PA 54T69

VAYSENBERG, A. O.

Existence of particles with a mass intermediate between the mesotron and proton. A. I. Alikhanyan, A. I. Alikhanov, and A. Vaisenberg. Compt. rend. acad. sci. U.R.S.S. 55, 701-4 (1947) (in English); J. Phys. (U.S.S.R.) 11, 97-9 (1947) (in English); cf. C.A. 40, 10869, 13876.- Cosmic rays were investigated at an altitude of 3250 m. above sea level by using a system of counters which permitted simultaneous measurement of both the curvature of a particle's path and its range. Analysis of the results obtained shows that cosmic rays contain pos. and neg. particles, called "barytrons," with a mass larger than that of the meson. More than 4,000 barytrons have been observed, and the no. of pos. barytrons appears to be 1.7 times larger than the no. of neg. barytrons. At an altitude of 3250 m. above sea level, the no. of barytrons amount to 10% of the no. of mesons. Frank Gonet

Inst. for Physical Problems, AS USSR

VAYSENBERG, A. O.

Existence in cosmic rays of positive and negative particles with a mass greater than the mass of the meson. A. I. Alikhanian, A. I. Alikhanov, and A. Vaysenberg. Zhur. Eksptl. Teoret. Fiz. 18, 301-36 (1948); cf. C.A. 43, 1642c, 4105af.- The hard and soft components of cosmic rays at 3250 m. above sea level were analyzed in a magnetic field by an elaborate counter arrangement, and curves are given for the no. of trajectories vs. displacement of particles. Pos. and neg. particles are indicated with masses greater than the mass of a meson, some with a mass greater than the proton mass.

F.H. Murray

PA 12/49T99

VAYSENBERG, A.

USSR/Nuclear Physics - Mesotrons
Nuclear Physics - Cloud Chambers

Apr 48

"Photographing the Disassociation of Heavy Mesotrons in a Wilson Chamber," A. Vaysenberg, 4½ pp

"Uspekhi Niz Nauk" Vol XXXIV, No 4

After a paragraph on the work of Alikhan'yan, Alikhanov and himself on Mt Alagez in 1946, Vaysenberg devotes remainder of article to a paper by Rochester and Butler. ("Nature," 1947).

12/49T99

PA 11/49T92

VAYSENBERG, A.

USSR/Nuclear Physics - Mesotrons
Nuclear Physics - Cloud Chambers

Jun 48

"New Photographs of Heavy Mesotrons in a Wilson
Chamber," A. Vaysenberg, 1 p

"Uspekhi Fiz Nauk" Vol XXXV, No 2

Photographs appeared in first number of "Bulletin of
the American Physical Society" for 1948. Mesotron
mass calculated therefrom confirms 1946 observations
of Alikhanyan and other Soviet physicists.

11/49T92

VAYSENBERG, A.

USSR/Nuclear Physics - Cosmic Radiation
Nuclear Physics - Particles Jun 48

"Spectrum of Varitron Mass at 3,250 Metres Above Sea Level," A. Alikhanyan, Corr Mem, Acad Sci USSR; A. Vayzenberg, V. Kharitonov, M. Devon, Inst of Physic Problems, Acad Sci USSR, and Phys Inst, Acad Sci Armenian SSR, 4 pp

"Dok Ak Nauk SSSR" Vol IX, No 9

Investigation on subject began in 1946 in Cosmic Ray Laboratory on mount Alagez. Results published in various journals, including Vest Ak Nauk SSSR, No 5, 1947. (See Abstract 54769). Authors discuss particles intermediate between mesotrons and

6/49T91

USSR/Nuclear Physics - Cosmic Radiation Jun 48
(Contd)

protons, calling them varitrons because they can be either positive or negative. Work was resumed in 1947. Describes improvements in apparatus. Tabulates masses and charges of particles observed. Graphs show spectra of particles which passed through 0.8-cm lead sheet but were absorbed in 1.05 cm lead sheet. Consist of a series of well defined maxima and minima. Authors consider this supports their previous hypotheses on ionization of particles. Submitted 29 Apr 48.

PA 6/49T91

6/49T91

Mesons in the hard component of cosmic rays. A. I. Alikhanian, A. Valsenberg, M. Dakov, V. Kharitonov, and A. Konstantinov. *Doklady Akad. Nauk S.S.R.*, 61, 30-42 (1948).—Pos. and neg. mesons occur in the hard component with masses as in the soft component (cf. *C.A.*, 43, 1042). The sharpness of the max. may be due to the fact that these mesons result from the decay of heavier ones. Cyrus Feldman

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859120020-3"

VAYSENBERG, A.

USSR/Nuclear Physics - Cosmic Radiation
Nuclear Physics - Particles, Charged - Trajectories

Jul 48

"Varitrons in the Hard Component of Cosmic Rays," A. Alikhanyan, Corr Mem, Acad Sci USSR, A. Vaysenberg, M. Dayon, V. Kharitonov, A. Konstantinov, Inst of Phys Problems, Acad Sci USSR, and Phys Inst, Acad Sci, Armenian SSR, 3 $\frac{1}{2}$ pp

"Dok Ak Nauk SSSR" Vol LXI, No 1

Previous article in "Dok Ak Nauk SSSR" Vol LX, No 9 described spectra of varitron masses obtained by examination of trajectories of particles absorbed in lead filters installed above a series of counters. Present article discusses data obtained on the spectrum of the hard component, Submitted 18 May 1948.

PA 8/49 T105

VAYSENBERG, A.O.

24760. VAYSENBERG, A.O. O Raspade Yaritronov. Zhurnal Iksperim. I Teoret. Fiziki,
1949, VYP. 8, S. 727-30.

SO: Letopis' No. 33, 1949

VAYSENBERG, A. O.

PA 61/49T79

USSR/Nuclear Physics - Varitrons Aug 49
Nuclear Physics - Mesons

"Disintegration of Varitrons," A. O. Vaysenberg,
Inst of Phys Problems, Acad Sci USSR, 3 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 8

Recorded the spectrum of varitron masses at 3,250 meters (Alagez Mountain) using a multivibrator circuit through which the lifetime of varitrons was determined in the order of microseconds. Showed that, in this time interval, varitrons with masses greater and less than 220 m_e disintegrated as well as varitrons with mass 220 m_e. Submitted 9 Apr 49.

61/49T79

C.A.

The remarks of V. A. Kravtsov on "The formula for the mass spectrometer of Alikhanyan and Alikhanyan." A. I. Valenberga, V. Morozov, and A. Khrimyan. ZAIV. *Zhurn. Tekhn. Fiz.* 20, 103X (1950); cf. preceding abstr.—
The authors show that although the error pointed out by Kravtsov does exist, it exists only in an intermediate equation which was never used for purposes of calen. They give — the equation which was actually used for the calen. of the impulse and show that it is correct. J. Rovtar Leach

VAYSENBERG A.O.

EILMORE, William Cronk; VAYSENBERG, A.O. [translator]; TROITSKAYA, V.A.
[translator]; MICHULIN, V.V., redaktor.

[Electronics in nuclear physics] Elektronika v iadernoi fizike.
Moskva, Izd-vo inostrannoj lit-ry, 1951. 406 p. [Microfilm]
(MLRA 7:11)
(Electronic apparatus and appliances) (Electron-tube
circuits)

VAYSENBERG, A.

Cosmic Rays

Use of scintillator - calculators in studies of cosmic radiation. Usp.fiz.nauk.,
45, no. 4, 1951.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

VAYSENBERG, A.

Mesotrons

Multiple dispersion of π -mesons., Usp. fiz. nauk, 45, no. 4, 1951.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

VAYSENBERG, A. O., SELINOV, I. P.

MATTER

Elementary particles. Fiz. v shkole 12 no. 3 (1952)

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

VAYSENBERG, A.-O.

PA 249T84

USSR/Nuclear Physics - Neutrons

Sep 52

"Deflection of Neutrons in a Field of Gravitational Force," A. O. Vaysenberg, Cand Phys-Math Sci

Priroda, Vol 41, No 9, p 102

Analysis of the data of expts on the distribution of velocities of neutrons emitted in two beams from a neutron source leads to the conclusion that the acceleration of the gravitational force acting on the neutron beam and causing its displacement is equal to $g = (935 \pm 70)$ cm/sec², which is in agreement, within the limits of exptl errors, with the usual value 980, true for macroscopic bodies.

Review of the English-language article by

A. McReinolds Phys Rev, 1951

249T84

VAYSENBERG, A.

Quantum Theory

Measuring the velocity of quanta in air.
Usp.fiz.nauk 46 no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

VAYSENBERG, A. O.

Vaysenberg, A. O. -- "An Investigation of the Spectrum and Composition of Cosmic Radiation at 3,250 Meters Above Sea Level." Dr Phys-Math Sci, Moscow Mechanics Inst, Moscow 1953. (Referativnyj Zhurnal--Fizika, Jan 54)

SO: SUM 168, 22 July 1954

VAYSENBERG, A.O.

VAYSENBERG, A.O.

U.S.S.R.

The dependence of counter-efficiency on overvoltage
A. O. Vaysenberg and V. G. Kirillov-Tsvyumov. Zhur.
Tekhn. i Teoret. Fiz. 24, 121-5 (1953).—The effect of over-
voltage was compared for Geiger counters filled with Ar and
He. The efficiency of the former was completely inde-
pendent of overvoltage, but for the latter there was a strong
dependence of efficiency on overvoltage. J. R. Leach

VAYSENBERG, A.O.

USSR

537.542

13155. Arrangement of delayed coincidences with a resolving period of 10^{-7} sec. A. G. VAYSENBERG. Zh. tekh. fiz., 24, No. 5, 545-6 (1953) In Russian.

An electronic circuit for delayed coincidences, suitable for measuring periods in the range from 2×10^{-7} to 10^{-7} sec, is fully described and illustrated. It is one of the variants of the arrangement described by Zhdanov and Naumov [Abstr. 3299 (1949)], involving the use of the self-extinguishing counters as detectors, which generate the short-period voltage pulses when a meson or disintegration particle passes through them. It has been found that, in counters 80 cm long and 3 cm dia., filled with A (8 cm Hg) and methylal (1 cm Hg), a lag of 0.5-1 μ sec occurred once in 400, and a lag exceeding 1 μ sec once in 5000 passages.

P. LACHMAN

VAYSENBERG, A.O.

USSR.

537.591.1

11175. Determination of the mass of the charged cosmic-ray particles with a life period of 2 μ sec.

A. O. VAYSENBERG, G. A. MASHKOV AND V. M. KHANTIONOV. *Zh. ekspir. teor. Fiz.*, 24, No. 5, 550-61 (1953). *In Russian*.

See Abstr. 1032 (1950), 11153 (1954). The research was carried out to provide answers to the following questions: (1) Does the air stream of cosmic rays at an altitude of 3250 m contain, besides the μ mesons, also other unstable particles with the same life period? (2) What is the nature of the decay of particles to which a mass greater than that of the proton should be ascribed? Masses of particles decaying within 2 μ sec were determined by using an apparatus which is described and illustrated; all disintegrations observed can be explained by assuming the presence of the μ - and π -mesons. Besides, decays were observed, involving the incidence of the meson-generating protons on the absorbing substance.

F. LACHMAN

Paul Joffe

VAYSENBERG, A. O.

21 Jul 53

USSR/Nuclear Physics - Mesons, Slow

"Transient Effect of Slow Mesons," A. O. Vaysenberg

DAN SSSR, Vol 91, No 3, pp 471-474

Describes expts, instruments, and method for detecting transient effect of mesons originating in vicinity of recorder. Results are plotted in curve of amount of decays in relation to thickness of graphite filter. Indebted to A. I. Alikhanyan, V. Smirnitskiy, and L. Novikov. Presented by Acad A. I. Alikhanov 30 May 53.

262T65

VAYSENBERG, A. O.

Photographic Abs

TRANSITION EFFECT FOR SLOW MESONS. A. O. Vaysenberg. Doklady Akad. Nauk S.S.R. 91, 483-5(1953) July 21.

P 4 1953

(In Russian)

Industrial & Scientific
Application of Photography

If the formation of slow mesons by proton-neutron reaction has significant intensity, a noticeable transition effect is detectable by placing a slow-meson absorber over the detector. The arrangement used to detect the disintegration is described. Graphite was used as the meson generator. The number of transitions reach a maximum with 19.2 g/cm² of absorber. (J.S.R.)

10-28-54

RML

VAYSENBERG, A.O.

USSR/Nuclear Physics - Radioactivity

Card 1/1 : Pub. 124 - 8/29

Authors : Alikhanyan, A. I., Memb. Corresp. of Acad. of Sc. USSR.; and Vaysenberg,
A. O.

Title : "Artificial radioactivity"

Periodical : Vest. AN SSSR 6, 51-61, June 1954

Abstract : Speeches held in commemoration of the 20th anniversary of the discovery, by Irene and Frederic Julio-Curie, of artificial radioactivity are presented. Various stages in the development of nuclear physics, beginning with the discovery by Marie Curie of two radioactive elements Po and Ra (1897-1898), the discovery of neutron radioactivity by Fermi and associates and including developments up to 1953, were mentioned. The direct relation between artificial radioactivity and various cosmogonic problems is explained. The speakers also predicted that by 1970 the total amount of radioactive fission products obtained from reactors will reach 100 tons per year which will correspond to a radioactive radiation energy of 12 million kw.

Institution : ...

Submitted : ...